

# Electronics (1)

## Laboratory Experiments

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# Electronic Devices

## First Term

1- PN Junction (Diode)



2- Bipolar Junction Transistor (BJT)

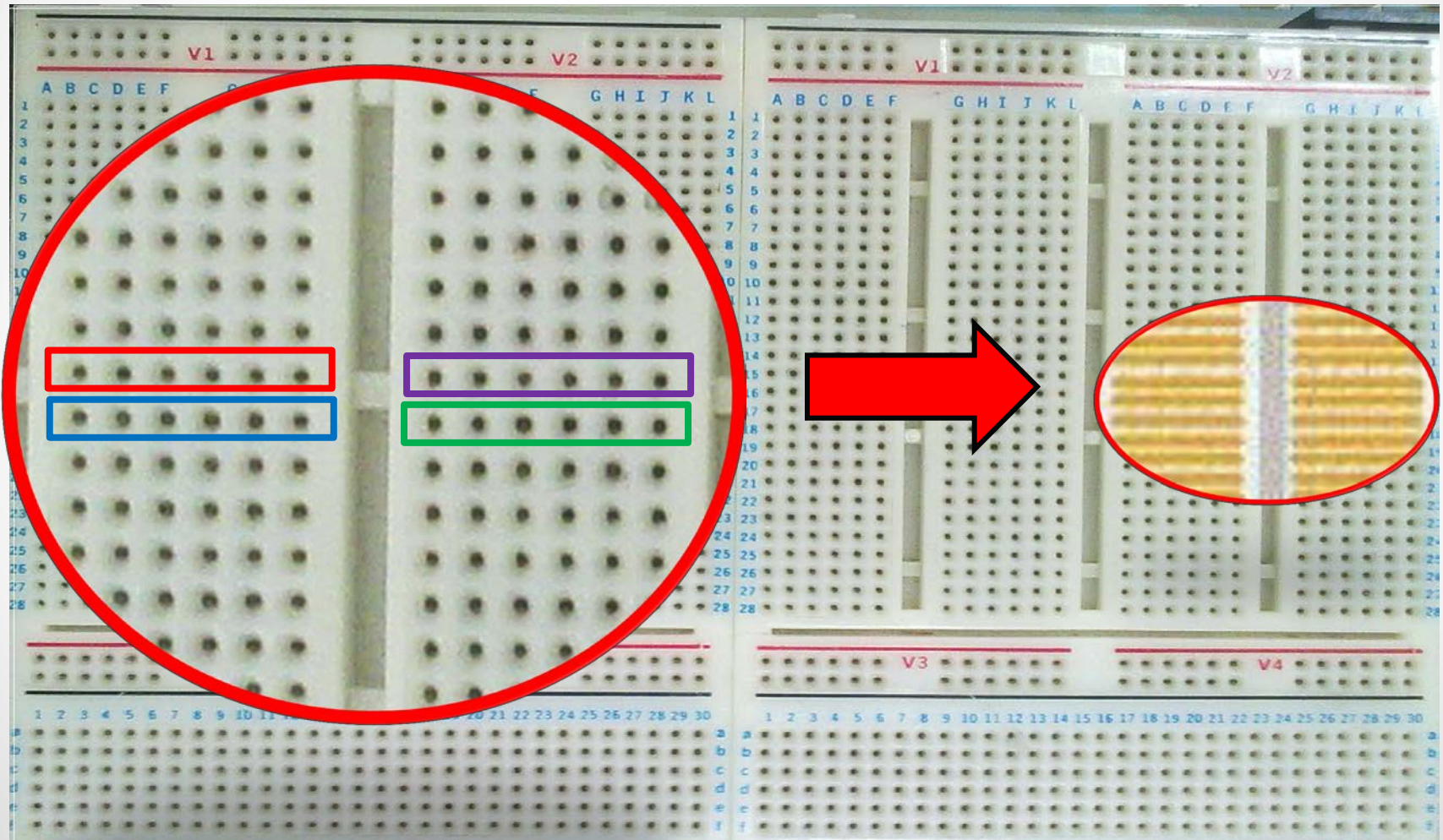


	Experiment
1	Oscilloscope & Function generator & Test Board & Connection
2	Diode c / c & Or gate & And gate
3	Zener Diode & Voltage Regulator
4	Transistor c / c & $\beta$ measurement & Inverter
5	Common Emitter Amplifier
6	Common Base Amplifier & Emitter follower
7	Review

# laboratory Equipments

1. Test Board
2. Function generator
3. Digital Multimeter
4. Oscilloscope

# Test Board

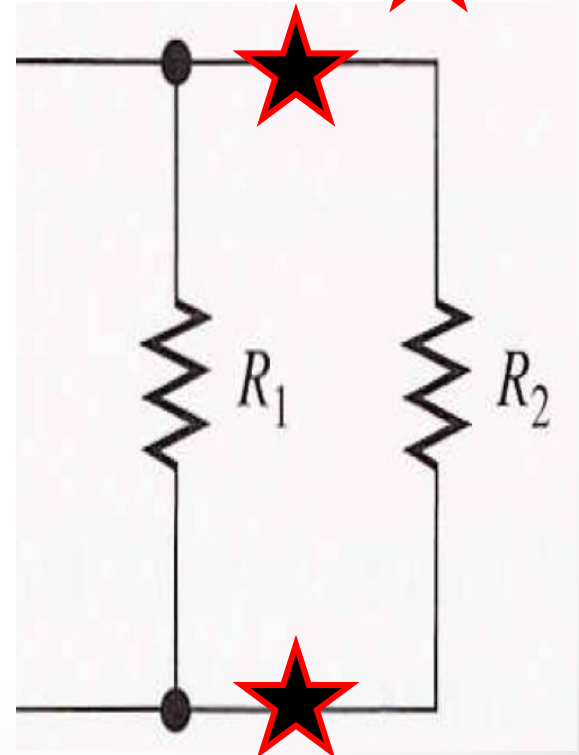


# *Example*

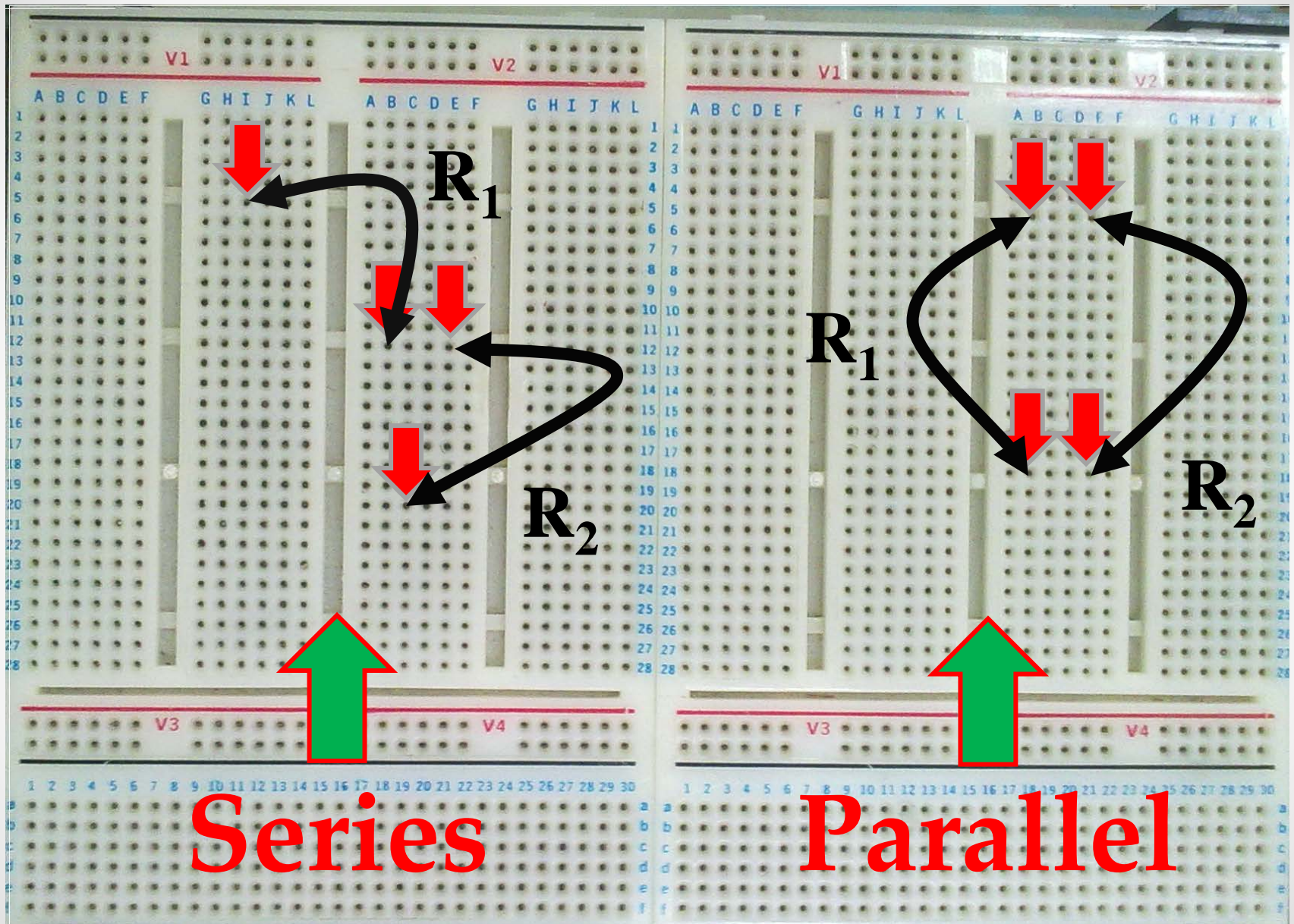
- Resistors in Series



- Resistors in Parallel

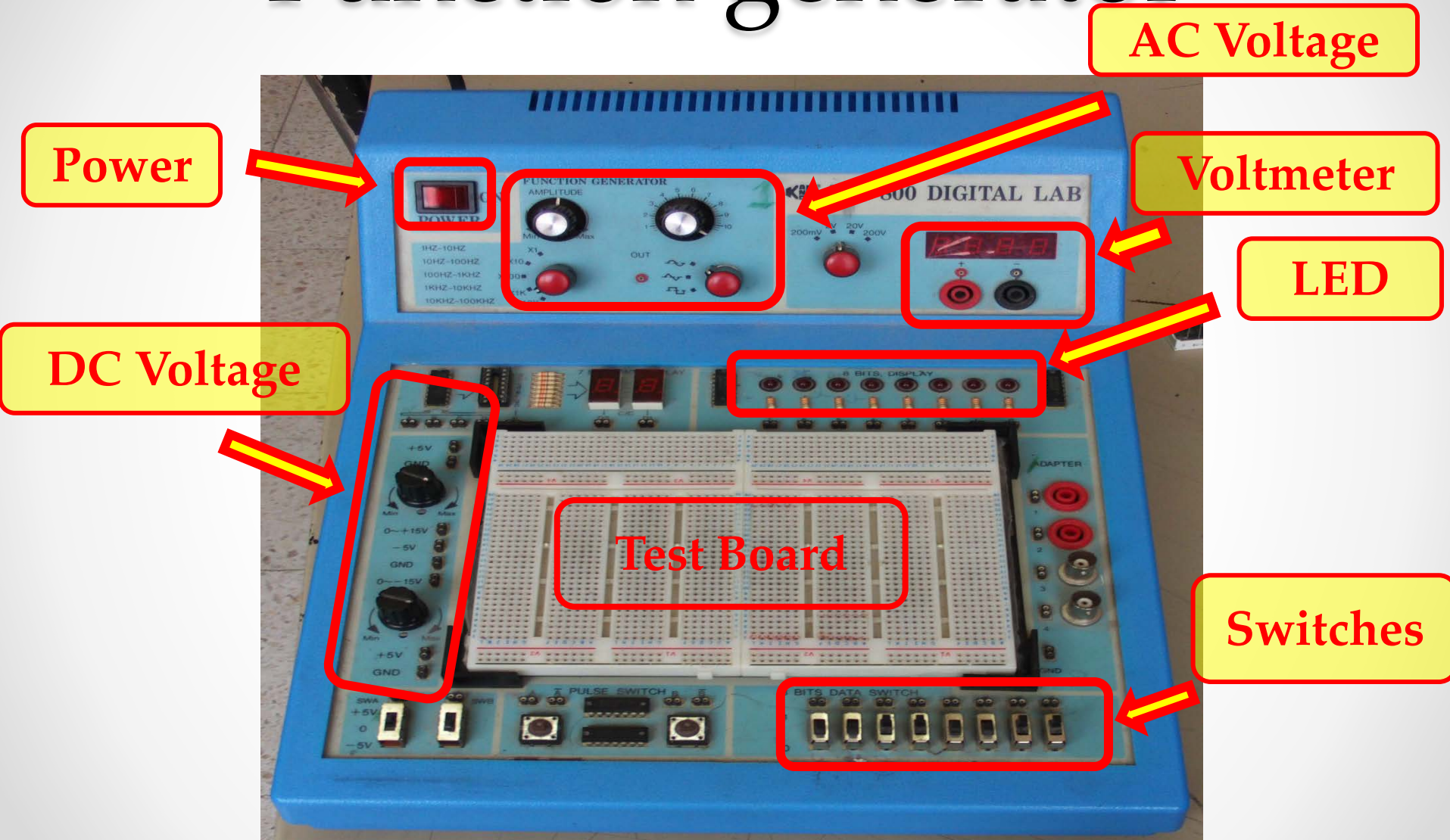






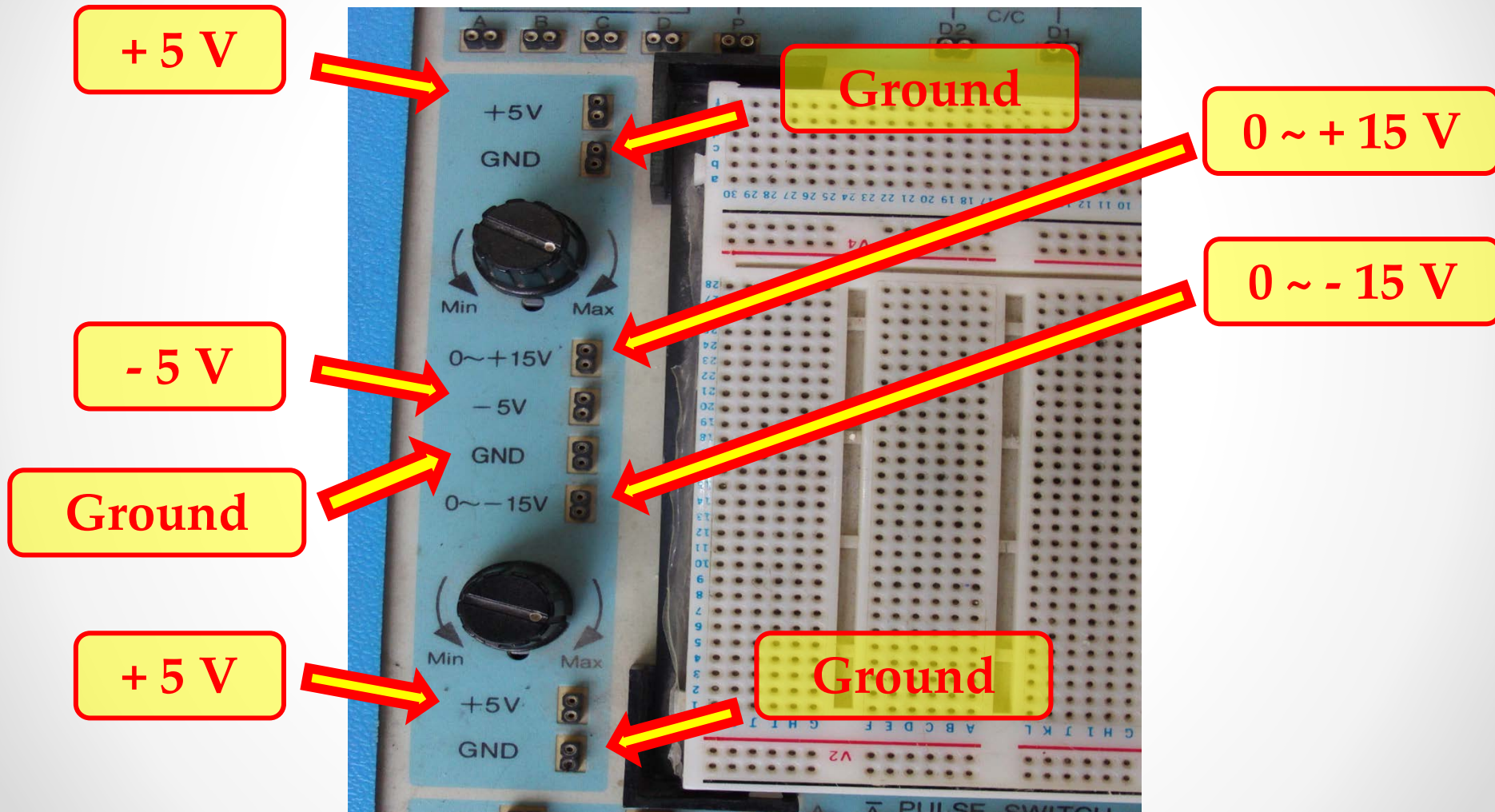


# Function generator

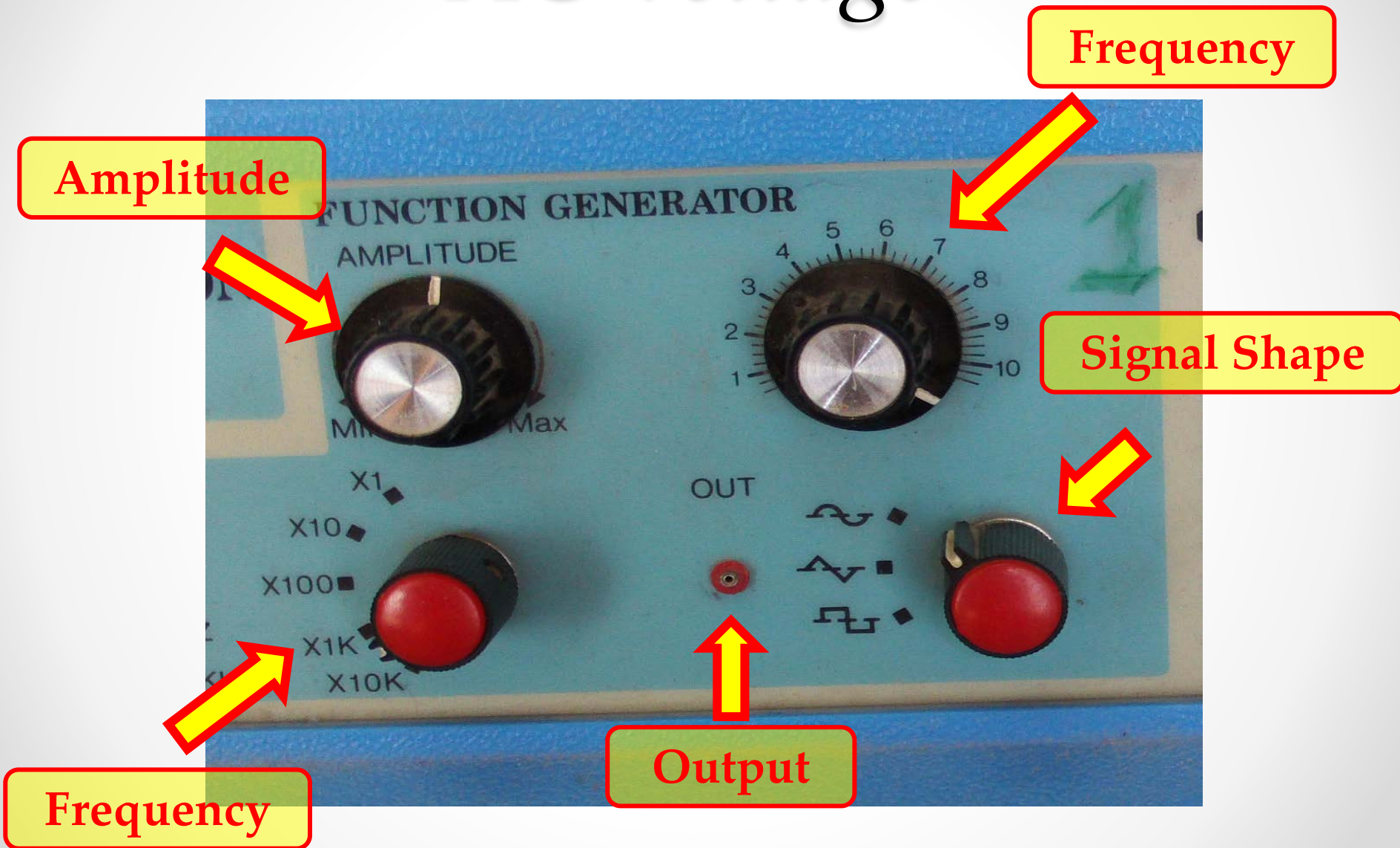




# DC Voltage



# *AC Voltage*

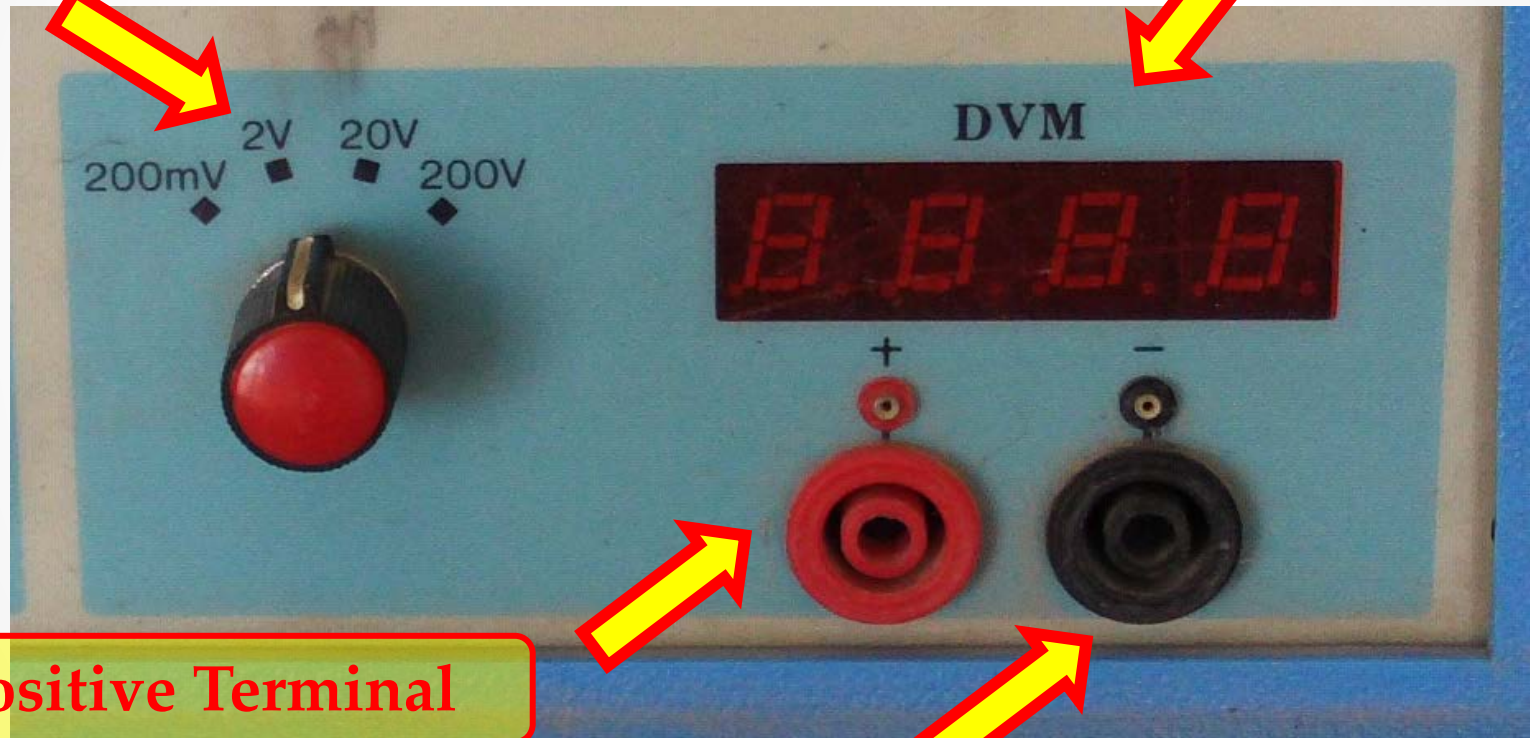




# Voltmeter

Voltmeter Range

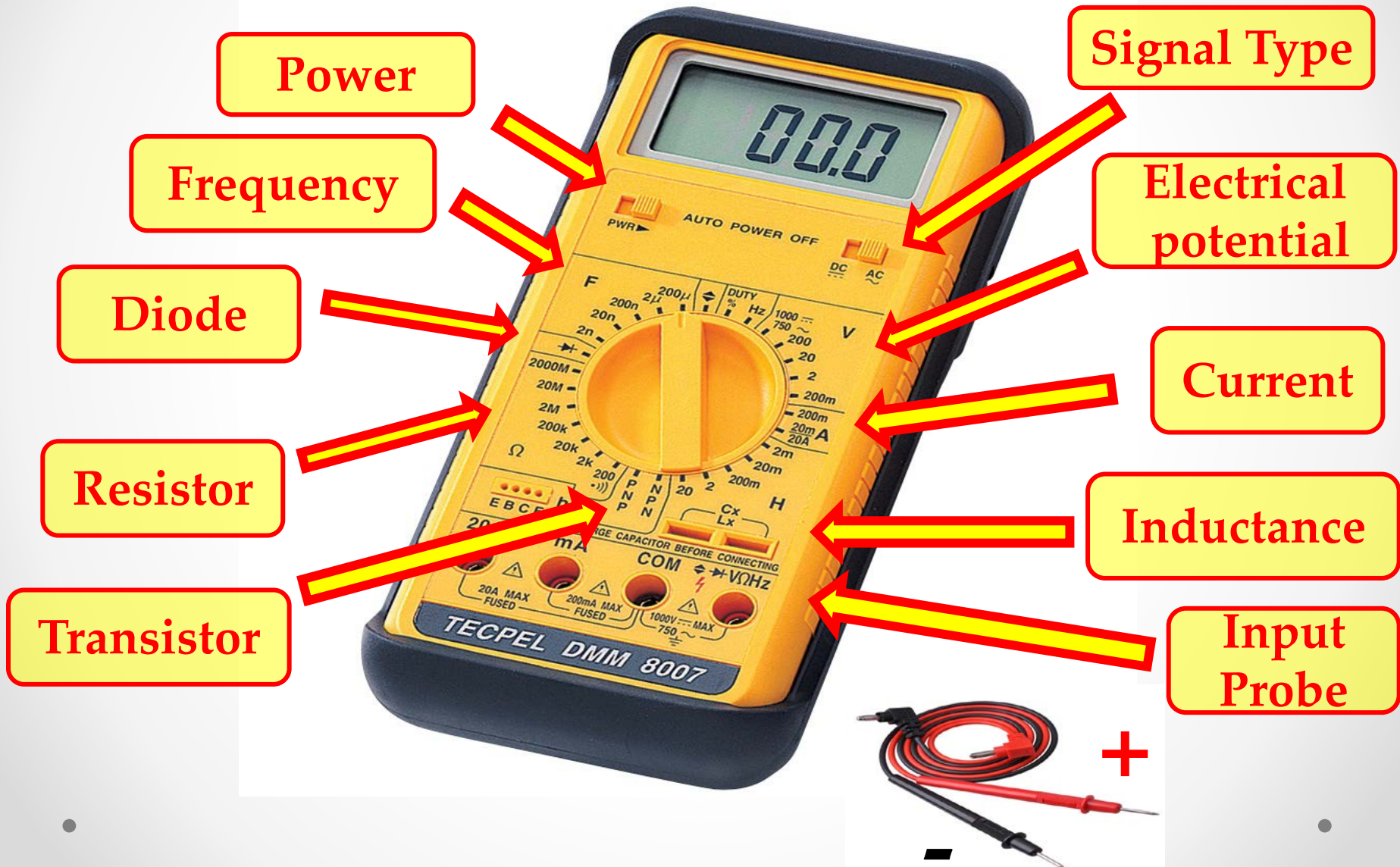
Measured Value



Positive Terminal

Negative Terminal

# Digital Multimeter

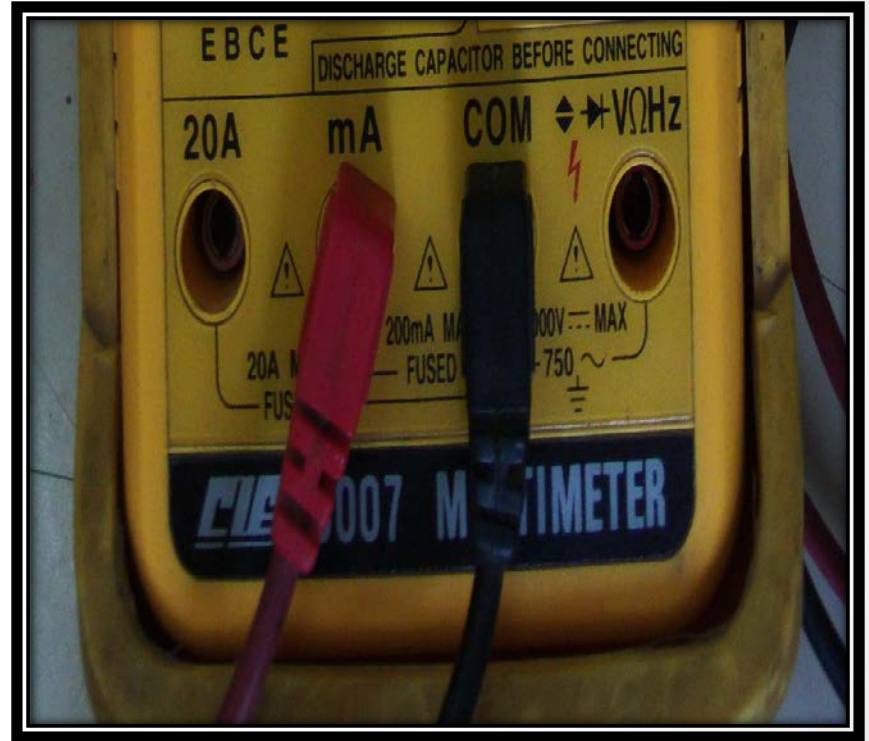




# Probes



**V + D + R + F**

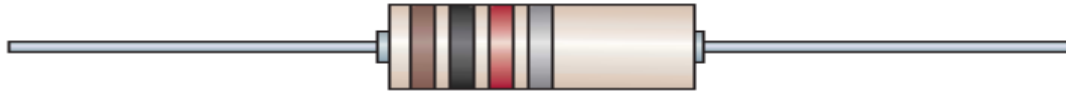


**Ammeter**

# *Fixed Resistor*



2 W



1 W



$\frac{1}{2}$  W

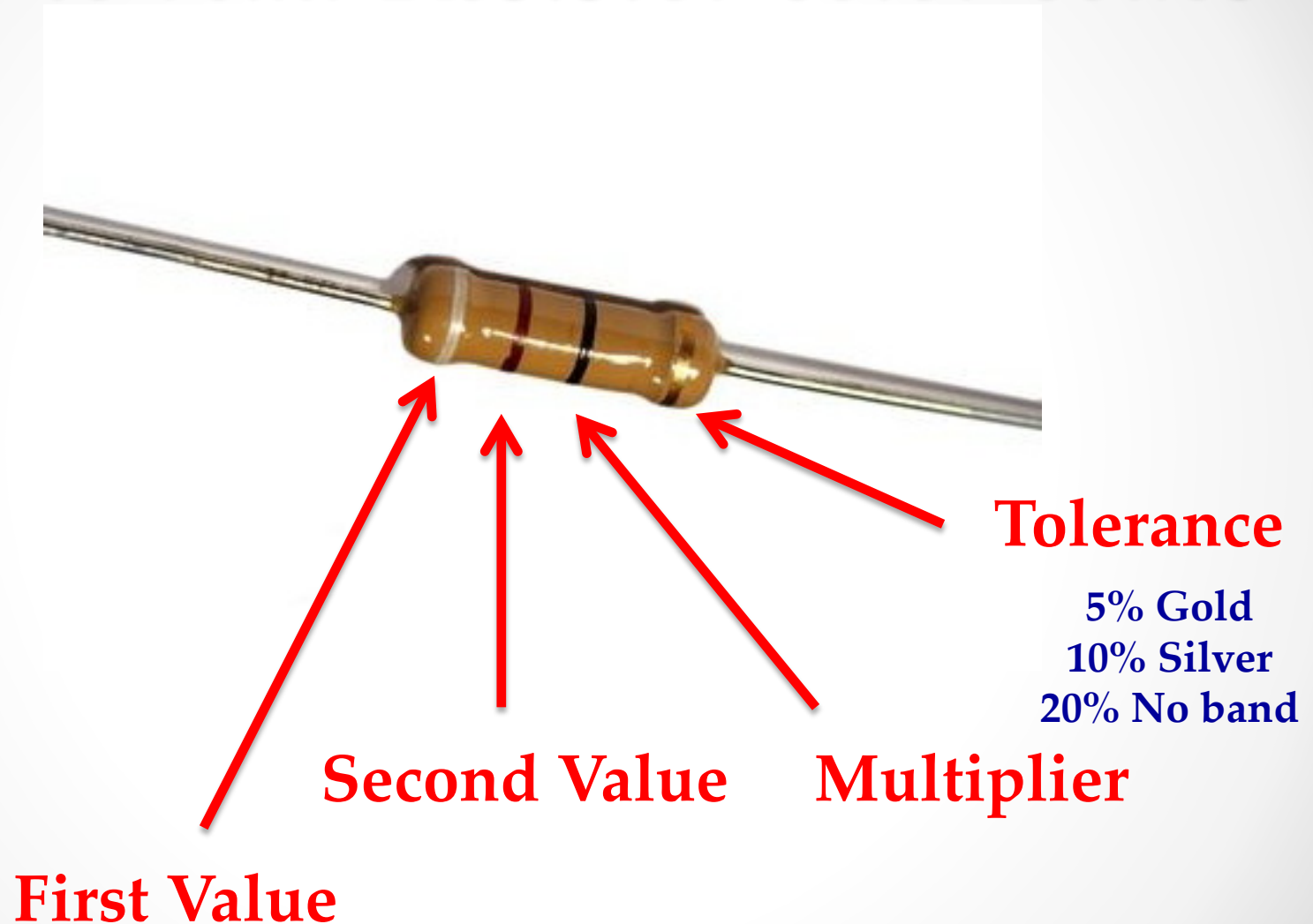


$\frac{1}{4}$  W



$\frac{1}{8}$  W

# *How to read Resistor color codes*

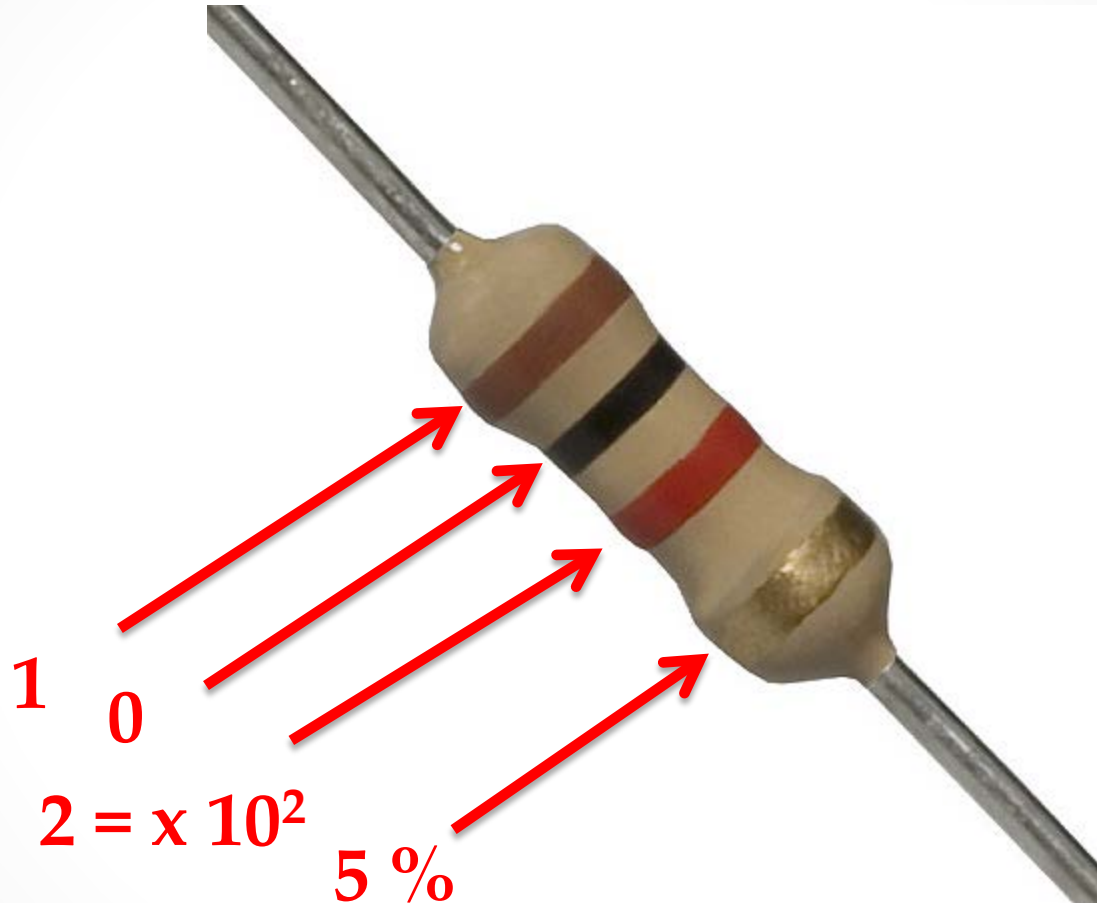


# *Resistor color coding*

<b>Color</b>	<b>Value</b>
<b>Black</b>	<b>0</b>
<b>Brown</b>	<b>1</b>
<b>Red</b>	<b>2</b>
<b>Orange</b>	<b>3</b>
<b>Yellow</b>	<b>4</b>
<b>Green</b>	<b>5</b>
<b>Blue</b>	<b>6</b>
<b>Violet</b>	<b>7</b>
<b>Gray</b>	<b>8</b>
<b>White</b>	<b>9</b>



# Example



$$10 \times 10^2 = 1000 \, \Omega = 1\text{K} \, \Omega \pm 5 \% \times 1\text{K} \, \Omega = 950 \, \Omega \sim 1050 \, \Omega$$